

In the claims:

1. (currently amended) A wireless communication system providing improved communications between a cell phone in an enclosed environment that is at least substantially shielded from RF signals, and a cell phone system located outside of the enclosed environment, the wireless communication system comprising:

- a primary repeater operable to receive cell system downlink RF signals and transmit primary repeater uplink RF signals to the cell phone system;

- at least one auxiliary repeater arranged within the enclosed environment;

- at least one gateway antenna, coupled to the primary repeater, arranged at an entrance point of the enclosed environment so as to radiate primary repeater downlink RF signals into the enclosed environment and receive auxiliary repeater uplink RF signals from the auxiliary repeater;

- a donor antenna coupled to the auxiliary repeater, said donor antenna and auxiliary repeater being operable to receive primary repeater downlink RF signals from the primary repeater and radiate auxiliary repeater uplink RF signals to the primary repeater; and

- a server antenna coupled to the auxiliary repeater, said server antenna and auxiliary repeater being operable to receive cell phone uplink RF signals from the cell phone

within the enclosed environment and radiate auxiliary repeater downlink RF signals to said cell phone;

a first interface that is coupled to a control station for converting downlink control data into corresponding downlink control RF signals and for converting uplink signaling RF signals into corresponding uplink signaling data;

a first combiner/decombiner that is coupled to the first interface for combining the downlink RF signals with the downlink control RF signals for transmission by the gateway antenna, and for separating uplink RF signals from the uplink signaling RF signals received by the gateway antenna;

a second interface that is coupled to a signaling and driving system for converting the downlink control RF signals into driver signals and for converting signaling signals into the uplink signaling RF signals; and

a second combiner/decombiner that is coupled to the second interface for combining the uplink RF signals with the uplink signaling RF signals for transmission by the donor antenna of the auxiliary repeater, and for separating the downlink RF signals from the downlink control RF signals received by the donor antenna of the auxiliary repeater;

wherein the auxiliary repeater and primary repeater downlink RF signals convey information in the cell phone system downlink signal to the cell phone and the auxiliary repeater and primary repeater uplink RF signals convey information in the cell phone uplink signal to the cell phone system, to maintain communications between the cell phone and the cell phone system;

wherein the auxiliary repeater is mounted on a mobile conveyance movable in the enclosed environment with the donor antenna located outside the mobile conveyance and the server antenna located inside the mobile conveyance; and

wherein the enclosed environment is a lift shaft, the mobile conveyance is a lift car and the gateway antenna is arranged at a ceiling of the lift shaft.

2. (canceled)

3. (canceled)

4. (previously presented) A wireless communication system according to Claim 1, wherein the auxiliary repeater comprises a bidirectional amplifier having a gain that is adjustable based on a distance between the mobile conveyance and the gateway antenna.

5. (previously presented) A wireless communication system according to Claim 1, comprising a plurality of additional auxiliary repeaters arranged spaced apart from each other in a cascade within the enclosed environment.

6. (canceled)

7. (canceled)

8. (previously presented) A wireless communication system according to Claim 5, comprising a plurality of gateway antennas arranged at respective entrance points of the enclosed environment.

9. (canceled)

10. (currently amended) A wireless communication system according to Claim 1 ~~Claim 9~~, wherein the signaling and driving system is arranged in the mobile conveyance and comprises a driver for controlling the mobile conveyance based on the driver signals, and a sensor for producing the signaling signals based on a status of the mobile conveyance.

11. (currently amended) A wireless communication system according to Claim 1 ~~Claim 9~~, wherein the signaling and driving system further comprises a signal generator being operable by an operator of the mobile conveyance.

12-18. (Canceled)

19. (previously presented) A wireless communication system according to Claim 1, further comprising:

- a first interface that is coupled to a control station for converting downlink control data into corresponding primary repeater downlink control RF signals and for converting auxiliary repeater uplink signaling RF signals into corresponding uplink signaling data;

- a first combiner/decombiner that is coupled to the first interface for combining the downlink RF signals with the primary repeater downlink control RF signals for transmission by the gateway antenna, and for separating auxiliary repeater uplink RF signals from the auxiliary repeater uplink signaling RF signals received by the gateway antenna;

- a second interface that is coupled to a signaling and driving system for converting the primary repeater

downlink control RF signals into driver signals and for converting signaling signals into the auxiliary repeater uplink signaling RF signals; and

a second combiner/decombiner that is coupled to the second interface for combining the auxiliary repeater uplink RF signals with the auxiliary repeater uplink signaling RF signals for transmission by the donor antenna of the auxiliary repeater, and for separating the primary repeater downlink RF signals from the primary repeater downlink control RF signals received by the donor antenna of the auxiliary repeater.